The rise and rise of natural capital

The rise and rise of natural capital: What role for forestry?

Introduction

Increased pressure on natural resources is expressed globally through land degradation, biodiversity decline and global climate change. In response to recognition that these challenges must be addressed, there are growing expectations from across society for better environmental accounting and reporting from enterprises, which are increasingly regarded as key actors in modern decentralised environmental governance (Lemos and Agrawal, 2006). Consumers and investors have joined regulators and communities in seeking assurances that enterprises are operating sustainably.

Forestry has the potential to exacerbate or mitigate these global challenges, depending on how it is managed. The environmental and social impacts of unsustainable forestry are well understood (IPBES, 2019). However, the right forest in the right place can enhance environmental outcomes (Bastin et al. 2019) (Paudyal et al. 2020) and provide pathways to improving the livelihoods of rural and regional communities (Nambiar 2019). Forestry fundamentally depends on natural resources such as clean air, water, soils and biodiversity to generate economic and social benefits, and access to these resources is threatened by the same global challenges. To address societal expectations, the industry must rise to the challenge of being able to account and report on its impacts and dependencies as well as the benefits in a clear and transparent manner.

The two-way relationship between business and the environment is increasingly viewed through the lens of natural capital (Schumacher, 1973; Pearce, 1988), which has in turn led to a proliferation of frameworks for corporate natural capital assessment, valuation, accounting,

disclosure and risk assessment (NCC, 2016; CDSB, 2018; Ascui and Cojoianu, 2019; Barker, 2019; ISO, 2019). There is growing interest within the forest industry in applying these concepts and frameworks. Here we introduce some basic concepts, highlighting potential opportunities while recognising that there remain challenges to broader adoption within the industry.

What is natural capital?

The term 'natural capital' conceptualises nature as a set of assets: stocks of renewable resources such as clean air, water, soil and living things, as well as non-renewable resources such as minerals and fossil fuels. These natural capital assets produce flows of ecosystem services that have value because they benefit society. Some ecosystem services (such as clean air) benefit us directly, but often they are combined with other forms of capital (e.g. manufactured or human capital) in the economy to produce traditional economic goods and services, as illustrated in Figure 1 below. The flows of ecosystem services are dependent on both the amount (or extent) and condition of the natural capital stock (Hein et al. 2015).

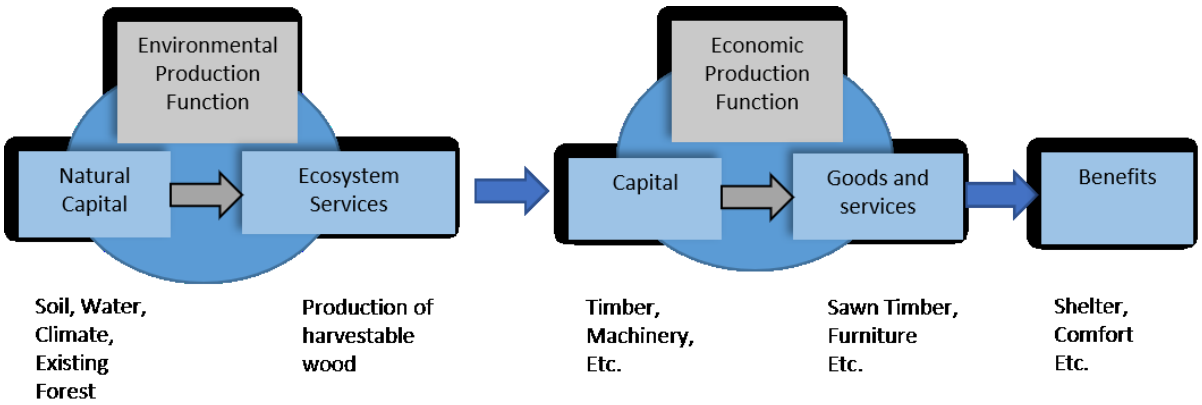

Figure 1. Natural capital as an input into economic production (adapted from Binner et al. 2017)

Conceptually, natural capital is similar to other forms of capital. However:

- The value of the ecosystem services provided by natural capital assets is dependent on the spatial location in which they are produced. For example, the value of clean water services provided by forests depends on their location relative to downstream households and businesses, recreation services depend on proximity to populations and biodiversity services depend on the surrounding habitats, configuration and connectivity. While the value of economic goods and services can be linked to the location of the production this is much less common than for ecosystem services.
- Some natural capital assets are capable of repair and regeneration without the intervention of humans. The capacity for regeneration is a central feature of renewable natural capital and can be enhanced or eroded by human activity.
- The substitutability of natural capital with other forms of human or manufactured capital has implications for the sustainability of economic development. Current evidence suggest that many natural capital assets cannot plausibly be substituted by other forms of capital. Hence, caution should be applied for activities that irreversibly degrade natural capital (Cohen et al. 2019).

Implications for business

Natural capital thinking encourages businesses to think beyond the scope of the economic production function illustrated in Figure 1, to consider their more fundamental dependencies on the environmental production functions provided by nature. This complements the more familiar imperative to consider business impacts on the environment as externalities, i.e outside the scope of the economic production function, until incorporated due to regulatory, consumer or other stakeholder pressure.

These considerations have implications for how companies manage their operations, configure their supply chains, identify strategic opportunities and risks, make investment decisions, and account and report on their activities to shareholders and other stakeholders. As a result a plethora of different natural capital business applications have been developed in recent years, with over 40 initiatives launched up to 2015 (Santamaria and Gough, 2017). This often leads to confusion. An important starting point, therefore, is to recognise that natural capital accounting, like carbon accounting (Ascui and Lovell, 2011), means different things to different people (Barker, 2019).

Nevertheless, there is gradual convergence on standardised approaches to certain applications. For example, the Natural Capital Protocol (NCC, 2016) provides a generic framework for businesses to identify their interests in natural capital, then measure and value what is relevant; without prescribing how such measurement and valuation should be done, or how it should be used or disclosed. The United Nations System of Environmental-Economic Accounting (SEEA) standard (UN, 2014) was adopted for national-level statistical reporting in 2012, providing a framework for measuring and valuing natural capital stocks and ecosystem service flows associated with specific land areas (Hein *et al.*, 2015). Although its applications at enterprise scales is in the early stages of implementation, SEEA can be adapted for forestry enterprises more easily than most other types of business, due to the direct association with specific land areas. However, other corporate accounting frameworks also exist (Barker, 2019). An international standard on monetary valuation of environmental impacts has been published (ISO, 2019), and the Natural Capital Finance Alliance has developed methods and tools for natural capital opportunity and risk assessment (NCFA and PwC, 2018; NCFA and UN Environment World Conservation Monitoring Centre, 2018;

Ascui and Cojoianu, 2019). Finally, the Climate Disclosure Standards Board has published a framework to guide corporate reporting of natural capital related information (CDSB, 2018).

Implications for forestry

The breadth of types of natural capital and complexity of interactions with an enterprise can be daunting. However, a materiality assessment of an organisation's impacts and dependencies on natural capital can constrain this effort (NCC 2016). The Natural Capital Protocol and the Natural Capital Finance Alliance provide guidance for conducting such assessments (Ascui and Cojoianu 2019). Materiality assessments have recently been carried out for the Australian forestry industry (O'Grady et al. 2020; Smith et al. 2020b). These demonstrate that forestry has highly material[1] dependency on natural capital. Thus, forestry's financial outcomes are strongly dependent on the flows of ecosystem services that are derived from its natural capital base.

Opportunities

Building capacity to account for and value the natural capital that they manage can help forest owners understand how to improve yields and sustain the productivity of their natural capital into the future. It also offers other opportunities:

[1] 'Information is material if its omission, misstatement or non-disclosure has the potential to adversely affect:
(a) decisions about the allocation of scarce resources made by users of the financial report; or
(b) the discharge of accountability by the management or governing body of the entity' (AASB 1995).

- It can also help to maintain social licence through improved communication with key stakeholders about the sector's natural capital impacts, benefits, dependencies and risks.

- Market-based instruments linked to natural capital are becoming increasingly common. These can open up new finance models for the industry (Smith et al. 2020a). Emerging opportunities may be linked to regulatory, investor or consumer demand for natural capital targets or outcomes, such as carbon credits or biodiversity stewardship payments.

- Opportunities for large-scale industrial forestry, in particular, relate to the rapid growth in responsible investment, leading to demand for new privately owned sustainable forestry assets that have positive natural capital impacts over and above economic returns (GIIN 2019).

- For publicly owned and managed forests, there is potential to issue green bonds for improved natural capital management.

- Interventions aimed at small-scale private native forest owners could also have a large cumulative impact, although such interventions would typically require some degree of government or philanthropic support, possibly combined with new revenue streams from environmental markets.

Other examples of emerging opportunities include: working forest conservation covenants, developing an Australian Forest Resilience Bond, increased public funding for forest natural

capital management, collaborative funding approaches to achieve landscape-level outcomes (e.g. fire management), blended finance, new environmental markets and sustainability linked loan schemes (Smith et al. 2020a). Many of these natural capital finance mechanisms already exist; the key challenge for the Australian industry in realising these is identifying and developing the projects that match the expectations and desired outcomes of the various mechanisms.

The Australian forestry industry has plans for significant expansion. Due to climate change, this expansion will be in environments likely to be warmer and drier in the future, where access to natural capital is increasingly contested. Building capacity within the forestry industry to recognise and account for these dependencies will better position the industry for the challenges associated with operating in a highly uncertain future. Increasingly, investors, lenders and other stakeholders will require disclosure of natural capital risks. Natural capital accounting and risk assessment can help to address these concerns, using approaches that link to existing financial reporting and disclosure obligations.

Challenges

Although there is interest and growth in a number of these opportunities, there are also challenges ahead. Overall awareness of natural capital is reasonably high within the forestry industry, building on the industry's long history of environmental management and sustainability certification. However, detailed understanding of the underlying concepts and processes remains relatively low (O'Grady et al. 2020). Broader uptake will require an investment in capability as well as a co-ordinated approach within the industry to ensure alignment and consistency in approaches. Making the case for this investment will be

difficult in the absence of a clear value proposition grounded in case studies that are led by the industry.

The measurement challenge also remains an important gap. While many players within the industry already invest considerably in environmental compliance and reporting, the opportunity to streamline this through natural capital accounting remains relatively unexplored. While it may be true that 'you can't manage what you don't measure', deciding what to measure, when and how are all important considerations in the adoption of natural capital accounting. While recent research provides guidance for helping with these decision points (O'Grady et al. 2020; Smith et al. 2020b), broader application and standardisation across the industry is required.

As we have discussed, there is growing convergence on a smaller number of methods and standards for different natural capital business applications. However, there is still a dearth of methods and standards that are specifically relevant to the key conceptual challenges for the forestry industry, such as ecosystem condition accounting and the measurement or modelling of environmental services. Furthermore, application and use cases at an enterprise scale are relatively few.

Finally, increased revenues associated with payments for ecosystem services is often cited as a key opportunity associated with natural capital accounting. However, there remains a lack of developed markets, and thus buyers for ecosystem services. While natural capital markets and finance are expanding rapidly, identifying projects that deliver *additional* environmental outcomes and required investment returns remains challenging.

Conclusions

There is growing interest within the forestry industry in the opportunities associated with better recognition and management of natural capital. These opportunities undoubtedly lie at the intersection of the growing demand for ecosystem services, sustainably produced resources and finance instruments linked to natural capital outcomes such as halting and reversing global land degradation, biodiversity loss and greenhouse gas emissions. Natural capital thinking and accounting can play a critical role in helping forestry enterprises identify and adapt to changes in the supply of ecosystem services associated with changing climates and competing demands for shared natural capital. A co-ordinated approach to natural capital management and an outcomes focus underpinned by credible and robust measures will help to build the value propositions that can support the forestry industry's planned expansion over the next decade. Natural capital thinking and natural capital accounting could shift the forestry industry from a compliance modus operandi to one focused on proactive management and protection of the very natural capital that supports the industry, ensuring the industry's long-term sustainability and viability.

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